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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/692,427

10/22/2003

Fu-Ling Hung

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11/30/2004

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EXAMINER

LEE, WILSON

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/692,427 | Applicant(s) HUNG, FU-LING | |
| | Examiner Wilson Lee | Art Unit 2821 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☒ Claim(s) 25-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 and 18 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they (all drawings) do not include any reference sign(s) mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections – 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-7, 10-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (5,353,214).

Regarding Claim 1, Kim discloses a high intensity discharge driver for a HID lamp (sodium or mercury lamp, L shown in figure 4 and abstract), comprising:

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- an input processor (10, BD) connected to an input power for suppressing a transient and an in-rush current of the input power (See Col. 2, lines 11-15);
- a main driver (50, 60) connected to the input processor (10) and a HID lamp (L) for driving and amplifying the input power; and
- a protection circuit (70) connected to the main driver and the HID lamp for controlling a timing of starting after a failure condition (when IC is suspended due to overload or overheat, the starting time will be delayed. See Col. 3, lines 39-59).

Regarding Claim 2, Kim discloses that the HID driver comprises a HID ballast (60) (See Figure 3).

Regarding Claim 3, Kim discloses that the HID lamp comprises a high-pressure sodium lamp or a metal (mercury) halide lamp (See Abstract).

Regarding Claim 5, Kim discloses that the HID driver comprises:

- a timing circuit (control circuit 40 for oscillating inverter 50 shown in Figure 1) connected to the main driver (50) for controlling a timing; and
- a starting circuit (trigger element DIAC2, transformer Ts, Col. 3, lines 5-7 and Figure 4) connected to the timing circuit and HID lamp for starting (triggering) the HID lamp.

Regarding Claim 6, Kim discloses that the HID driver comprises a HID ballast (60) (See Figure 3).

Regarding Claim 7, Kim discloses that the HID lamp comprises a high-pressure sodium lamp or a metal (mercury) halide lamp (See Abstract).

Regarding Claim 10, Kim discloses that the input processor (10) comprises an rectifier (BD) and filter circuit C1-C4, L1) (See Figure 3 and Col. 2, lines 11-14).

Regarding Claim 11, Kim discloses that the input processor comprises an electromagnetic wave controller (TNR) for suppressing an electromagnetic wave interference (See Col. 2, lines 50-57).

Regarding Claim 12, Kim discloses that the input processor comprises a negative temperature control (NTC) resistor for suppressing the in-rush current (See Figure 3 and Col. 2, lines 13-14).

Regarding Claim 14, Kim discloses that the input processor comprises a voltage sensitive resistor (NTC) for suppressing the in-rush current (See Figure 3 and Col. 2, lines 13-14).

Regarding Claim 15, Kim discloses that the main driver comprises a power factor correction circuit (20) connected to the input processor (10) (through circuits 30-60) and the protection circuit (70) (See Figure 1).

Regarding Claim 16, Kim discloses that the main driver comprises a special power supply (30) connected to the input processor (10), the PFC circuit (20), the timing circuit (40) and the protection circuit (70) (See Figure 1).

Regarding Claim 17, Kim discloses that the special power supply (30) comprises two circuit paths (from R17 to Q2 and from C12 to Q5) (See Figure 2).

Regarding Claim 18, Kim discloses that the main driver comprises a power driver (IC2) connected to the input processor (10), the special power supply (30), the PFC circuit (20) and the protection circuit (70) (See Figures 1-3).

Regarding Claim 19, Kim discloses that the power driver comprises a light adjuster (R23, VR3, C14, R19-R21, VR2) for adjusting the brightness of HID lamp by adjusting a frequency (duty ratio) of the power driver (See Col. 3, lines 15-25).

Regarding Claims 20 and 21, Kim discloses that the main driver comprises a half bridge inverter (Q2, Q3) connected to the input processor (10, BD) and the HID lamp (L) (See Figure 2).

Regarding Claim 22, Kim discloses that the main driver further comprises a feedback control circuit (detection transformer T4) (See Col. 3, lines 39-48) connected to the PFC circuit (20), the power drive (IC2) and the half bridge inverter (Q2, Q3) (See Figure 2).

Regarding Claim 23, Kim discloses that the starting circuit comprises a sub starting circuit having a SIDAC (DIAC2) connected in series to a diode (D8) and an inductor (TS) for starting the HID lamp quickly and reliably (triggering).

Regarding Claim 24, Kim discloses that the starting circuit comprises a capacitor (C26) connected in parallel to the HID lamp (L) in replacement of the sub-starting circuit when the HID lamp is a metal halide lamp (L) (See Figure 4).

Claim Rejections – 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (5,353,214) in view of Peil (5,428,267).

Regarding Claims 4, 8, 9, as discussed above, Kim essentially discloses the claimed invention but does not explicitly disclose AC having the input voltage in range of 85V to 305V at operating frequency of 50/60Hz. However, such AC source having the voltage in range of 85V to 305V at 60 Hz is standard to most of the households. For example, Peil discloses a standard AC voltage source (30, 31) having voltage of 240V at 60Hz. It would have been obvious to one of ordinary skill in the art to use Kim's invention with a common AC source e.g. Peil's source in order to energize Kim's invention.

Allowable subject matter

Claims 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

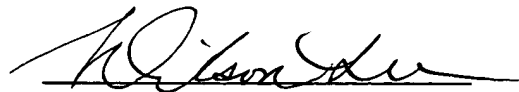
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hsu (5,321,337) discloses a ballast having starting current restraint circuitry for preventing a large in-rush current and protection circuitry for preventing damage due to a start-up failure. Guisinger (5,030,887) discloses a high frequency fluorescent lamp exciter.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824.

Papers related to Technology Center 2800 applications may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wilson Lee
Primary Examiner
U.S. Patent & Trademark Office

11/24/04